

WHAT IS CLAIMED IS:

1 1. An immunoglobulin molecule or fragment thereof comprising a region
2 where amino acid residues corresponding to at least a portion of a complementarity
3 determining regions (CDR) is replaced with a peptide selected from the group
4 consisting of hBNP, hBNP mimetics, GLP-1, GLP-1 mimetics, GLP-2, GLP-2 mimetics,
5 exendin, exendin mimetics, glucagons, glucagon mimetics and PACAP-38.

1 2. An immunoglobulin molecule or fragment thereof according to claim 1
2 further comprising at least one flanking sequence including at least one amino acid
3 covalently linked to at least one end of the peptide.

4 3. An immunoglobulin molecule or fragment thereof according to claim 1
5 wherein the immunoglobulin molecule fragment is selected from the group consisting
6 of Fab fragment, F(ab')₂ fragment and ScFv fragment.

1 4. An immunoglobulin molecule or fragment thereof according to claim 1
2 wherein the immunoglobulin molecule is a full IgG molecule.

1 5. An immunoglobulin molecule or fragment thereof according to claim 1
2 wherein at least a portion of two CDRs are replaced with a peptide.

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4 6. An immunoglobulin molecule or fragment thereof according to claim 5
5 wherein the two CDRs are both located on a heavy chain.

1 7. An immunoglobulin molecule or fragment thereof according to claim 5
2 wherein the two CDRs are a CDR3 of a heavy chain and a CDR2 of a heavy chain.

1 8. An immunoglobulin molecule or fragment thereof according to claim 1
2 wherein the immunoglobulin molecule or fragment thereof is human.

1 9. An immunoglobulin molecule or fragment thereof according to claim 1
2 wherein the immunoglobulin molecule or fragment thereof is anti-tetanus toxoid.

1 10. Nucleic acid encoding an immunoglobulin molecule or fragment thereof
2 according to claim 1.

1 11. An expression vector comprising nucleic acid according to claim 10.

1 12. A host cell transformed with an expression vector according to claim 11.

1 13. A method of producing an immunoglobulin molecule or fragment thereof
2 comprising culturing a host cell according to claim 12 under conditions suitable for
3 expression of the immunoglobulin or fragment thereof.

1 14. A composition comprising an immunoglobulin or fragment thereof
2 according to claim 1 and a pharmaceutically acceptable carrier.

4 15. A method of treating congestive heart failure comprising administering to a
5 subject an immunoglobulin molecule or fragment thereof comprising a region where
6 amino acid residues corresponding to at least a portion of a complementarity
7 determining regions (CDR) is replaced with a peptide selected from the group
8 consisting of hBNP and hBNP mimetics.

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10 16. A method of treating diabetes comprising administering to a subject an
11 immunoglobulin molecule or fragment thereof comprising a region where amino acid
12 residues corresponding to at least a portion of a complementarity determining regions
13 (CDR) is replaced with a peptide selected from the group consisting of, GLP-1, GLP-1
14 mimetics, GLP-2, GLP-2 mimetics, exendin, exendin mimetics, glucagons, glucagons
15 mimetics and PACAP-38.

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17 17. A method of treating obesity comprising administering to a subject an
18 immunoglobulin molecule or fragment thereof comprising a region where amino acid
19 residues corresponding to at least a portion of a complementarity determining regions
20 (CDR) is replaced with a peptide selected from the group consisting of, GLP-1, GLP-1
21 mimetics, GLP-2, GLP-2 mimetics, exendin, exendin mimetics, glucagons, glucagons
22 mimetics and PACAP-38.

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24 18. A method of preserving or improving beta-cell function comprising
25 administering to a subject an immunoglobulin molecule or fragment thereof comprising
26 a region where amino acid residues corresponding to at least a portion of a
27 complementarity determining regions (CDR) is replaced with GLP-1.

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2 19. A method of inducing endothelial-dependent relaxation of preconstricted
3 pulmonary artery rings comprising administering to a subject an immunoglobulin
4 molecule or fragment thereof comprising a region where amino acid residues
5 corresponding to at least a portion of a complementarity determining regions (CDR) is
6 replaced with GLP-1.

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8 20. A method comprising administering to a subject an immunoglobulin
9 molecule or fragment thereof comprising a region where amino acid residues
10 corresponding to at least a portion of a complementarity determining regions (CDR) is
11 replaced with a thiazolidinedione derivative.

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13 21. A method as in claim 20 wherein the thiazolidinedione derivative is a
14 peroxisome proliferator-activated receptor- γ ligand.

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16 22. A method of regulating adiponectin expression comprising administering
17 to a subject an immunoglobulin molecule or fragment thereof comprising a region
18 where amino acid residues corresponding to at least a portion of a complementarity
19 determining regions (CDR) is replaced with a thiazolidinedione derivative.

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